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WEEKLY REPORT

Guidelines for Surveillance, Prevention, and Control of West Nile Virus Infection — United States

The introduction of West Nile (WN) virus in the northeastern United States during the summer and fall of 1999 raised the issue of preparedness of public health agencies to handle sporadic and outbreak-associated vectorborne diseases (*1–3*). In many local and state health departments, vectorborne disease capacity has diminished. Because it is unknown whether the virus can persist over the winter, whether it has already or will spread to new geographic locations, and the public health and animal health implications of this introduction, it is important to establish proactive laboratory-based surveillance and prevention and control programs to limit the impact of the virus in the United States. On November 8 and 9, 1999, CDC and the U.S. Department of Agriculture (USDA) cosponsored a meeting of experts representing a wide range of disciplines to review the outbreak and to provide input and guidance on the programs that should be developed to monitor WN virus activity and to prevent future outbreaks of disease. This report summarizes the guidelines established during this meeting.

Surveillance

Because of bird migration patterns, enhanced surveillance is a priority in those states already affected or having a potential for being affected, including areas from Massachusetts to Texas along the Atlantic and Gulf coasts*. Active surveillance activities should be implemented through the winter in southern states where mosquito activity continues throughout the year, or implemented early in the spring in northern states where mosquito activity ceased with the onset of cold weather. Surveillance activities that should be emphasized in the catchment area include the following:

1. Active bird surveillance to detect the presence of and to monitor WN virus activity in both wild and sentinel bird populations (*4*). In particular, surveillance for dead crows may be a sensitive means to detect the presence of WN virus in an area.
2. Active mosquito surveillance to detect and monitor WN virus activity in mosquito populations and to help identify potential vectors (*4*).

*Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Louisiana, Maine, Maryland, Massachusetts, North Carolina, New Jersey, New York, New York City, Pennsylvania, Rhode Island, South Carolina, Texas, and Virginia.

West Nile Virus Infection — Continued

3. Enhanced passive veterinary surveillance by general alerts to veterinarians for reporting neurologic illness in animals, with emphasis on horses as a backup system to monitor the extent of WN virus transmission outside the bird-mosquito cycle.
4. Enhanced passive human surveillance by general alerts to health-care providers to report viral encephalitis and, if resources permit, aseptic meningitis in humans.

Laboratory Diagnosis

Diagnosis of WN or other virus infections requires specialized laboratory diagnostic tests (*4*). Surveillance activities require the availability of laboratories that can provide the following minimal laboratory diagnostic support:

1. **Serology.** Using CDC and USDA protocols and reagents, the IgM and IgG enzyme-linked immunosorbent assays (ELISAs) for WN virus should be established in all state public health and veterinary laboratories to provide initial testing for human and animal specimens (*5*). State health, veterinary, and reference laboratories with biosafety level 3 facilities should have the capability to conduct neutralization tests to identify specific flavivirus antibodies.
2. **Virus isolation and detection.** Regional state public health laboratories and reference laboratories with biosafety level 3 facilities should have virus isolation and identification capabilities. Selected other laboratories also should have reverse transcriptase polymerase chain reaction (RT-PCR) capability to detect viral RNA (*5–7*). Antigen-capture ELISAs to detect WN and other arboviruses in mosquito pools should be developed and made available to state and local laboratories. Regional state public health and reference laboratories should have the capability to use immunohistochemistry to detect virus in autopsy tissues.

Prevention and Control

Mosquito control is the most effective way to prevent transmission of WN and other arboviruses to humans and other animals, or to control an ongoing outbreak (*4*). Mosquito-control methods should include the following:

1. **Mosquito abatement districts.** The most effective and economical way to control mosquitoes is by larval source reduction through locally funded abatement programs that monitor mosquito populations and initiate control before disease transmission occurs. These programs also can be used as the first line emergency response for mosquito control if disease is detected in humans or domestic animals.
2. **Public outreach.** Public education about vectorborne diseases, particularly about modes of transmission and means of preventing or reducing risk for exposure, is a critical component of a prevention and control program.

Public Health Infrastructure

Effective surveillance, prevention, and control of vectorborne diseases, including WN virus, require designated resources in local and state health departments. Few state and local health departments have trained personnel or the resources to address adequately vectorborne diseases. At a minimum, each state health department should have functional arbovirus surveillance and response capability, including entomology

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and laboratory support. Geographic location and risk for WN transmission will determine the extent of a state's capability to handle arboviral diseases.

Interjurisdictional Data Sharing

WN fever is a zoonosis that affects numerous animal species, including humans. Effective surveillance and response will require coordination and data exchange between federal, state, and local agencies including departments of health, agriculture, and wildlife. A system of secure e-mail list servers and/or World-Wide Web sites will be necessary to facilitate the rapid and efficient exchange of data and other information between authorized users.

Research Priorities

Targets of applied research include understanding how and why the 1999 WN virus epidemic occurred, the public health and animal health implications of this introduction to the Western Hemisphere, and developing effective prevention strategies. High-priority research topics include defining current and future geographic distribution; bird migration as a mechanism of virus dispersal; vector relations and range; vertebrate host relations and range; virus persistence mechanisms; mosquito biology and behavior; mosquito control methods; mosquito surveillance methods; developing and evaluating disease prevention strategies; improving laboratory diagnostic tests; clinical spectrum of WN virus illness and long-term prognosis in humans; determining risk factors in enzootic areas; viral pathogenesis; genetic relations and the molecular basis of virulence; WN virus vaccine development for animals and humans; antiviral therapy for flaviviruses; and economic impact of the northeastern outbreak.

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Editorial Note: The 1999 WN virus epidemic in the New York City (NYC) metropolitan area resulted in 61 human cases (55 confirmed and six probable), including seven deaths (*1–3*). Exotic zoo birds, American crows, and horses also were affected and had high death rates. In addition to NYC, epidemic/epizootic transmission was detected in surrounding New York counties. Emergency surveillance programs detected epizootic transmission in New Jersey and Connecticut but no cases in humans.

The surveillance and laboratory efforts required from NYC, surrounding counties, and adjacent states consumed considerable resources and demonstrated a need to enhance state and local health department programs to combat vectorborne infectious diseases. In December 1999, CDC announced the availability of fiscal year 2000 supplemental funds to support WN virus surveillance, prevention, and control projects. The 19 state and local health departments eligible to apply for these funds represent those areas where WN virus transmission already has occurred or where transmission would be more likely to occur based on bird migration patterns.

The focus of these cooperative agreements enables state and local health departments to increase surveillance activities and enhance laboratory capacity for detecting WN and other arboviruses. In the initial year, surveillance activities will be focused to determine whether WN virus survived the winter and, if so, to ascertain its geographic distribution along the Atlantic and Gulf coasts.

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West Nile Virus Infection — Continued

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Accutane®-Exposed Pregnancies — California, 1999

Accutane®* (Roche Laboratories, Nutley, New Jersey), known by the generic name "isotretinoin," is a prescription oral medication approved by the Food and Drug Administration (FDA) to treat severe, recalcitrant nodular acne (*1*). It is also a known human teratogen that can cause multiple major malformations. Embryopathy associated with the mother's exposure to isotretinoin during the first trimester of pregnancy includes craniofacial, cardiac, thymic, and central nervous system malformations (*2,3*). In response to FDA recommendations (*4*), the manufacturer began a pregnancy-prevention program (PPP) in 1988 that included educational materials for physicians and patients and offered women reimbursement for contraceptive counseling by a physician. The PPP coordinators asked reproductive-aged women being treated with isotretinoin to enroll voluntarily in the Boston University Accutane Survey (BUAS) (*5*). The total number of reproductive-aged women taking isotretinoin in the United States is unknown; however, 454,273 women enrolled in the BUAS from 1989 to October 1999. BUAS has estimated that 38%–40% of reproductive-aged women taking isotretinoin chose to enroll in the survey (BUAS, unpublished data, 1999). Although isotretinoin is contraindicated in pregnancy and has a package label warning users to avoid pregnancy while taking it, exposed pregnancies occur (*5–7*). Approximately 900 pregnancies occurred among BUAS enrollees during 1989–1998 (BUAS, unpublished data, 1999). Roche Laboratories began direct-to-consumer print advertisements in 1996, added television and radio advertisements to selected cities in 1997, and expanded the campaign to the entire United States in 1998.

During March 1999, CDC interviewed women who had had recent isotretinoin-exposed pregnancies. The objective of the study was to draw attention to the continued occurrence of isotretinoin-exposed pregnancies 11 years after the inception of the PPP and to learn more about why these exposed pregnancies happened. California was selected as the study site because of its large population and the availability of referrals from the California Teratogen Information Service and Clinical Research Center (CTIS). This report summarizes the results of the study, which suggest that some isotretinoin-exposed pregnancies can be prevented. The case reports describe the experiences of three study respondents.

*Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

Accutane-Exposed Pregnancies — Continued

Summary of Interviews

Eligible women resided in California, used isotretinoin while pregnant, had their last menstrual period after January 1, 1997, and reported their pregnancy to the BUAS or to the CTIS. Twenty-three women met these criteria; 14 consented to be interviewed. The nine eligible women who did not respond or declined to participate were enrolled in the BUAS. Two of the 14 respondents had pregnancies reported to both the BUAS and the CTIS. Nine respondents were interviewed in person and five by telephone. The interview included questions on indications for and use of isotretinoin, contraceptive history, pregnancy history, procedures used in the initial prescription of isotretinoin, and recall of advertisements for prescription acne medication.

The 14 respondents were aged 15–39 years at the time of the exposed pregnancy (median age: 25.5 years); 10 (71%) were aged 21–39 years. Eight (57%) reported having at least one instance of sexual intercourse without using contraception at the time of the exposed pregnancy; 13 (93%) did not use two forms of contraception as recommended in the PPP procedures. Ten had pregnancy tests before starting isotretinoin; however, three whose pregnancy test results were negative were pregnant when they began taking isotretinoin. Two respondents reported that their exposed pregnancies occurred while using leftover isotretinoin from earlier prescriptions, and one received and filled the isotretinoin prescription in Mexico.

Seven (50%) respondents reported viewing an advertisement for prescription acne treatment before taking isotretinoin. Four of the seven reported that the advertisement contributed to their decision to seek acne treatment and to ask their physician about isotretinoin. Four live-born infants with no major malformations resulted from these 14 pregnancies. One live-born infant had major malformations. The other pregnancy outcomes were four spontaneous abortions and five induced abortions. No information was available on the presence of malformations in the aborted fetuses.

Although all 14 respondents knew that isotretinoin should not be used during pregnancy, none reported seeing all components of the PPP, and four had not seen any component other than the information available on the isotretinoin packet. None of the women reported being referred for contraceptive counseling or being told that they would not have to pay for the counseling.

Case Reports

Case 1. After taking isotretinoin for 1 month, a 25-year-old woman was notified by her dermatologist that her pregnancy test was positive, despite negative results on a pregnancy test before beginning isotretinoin. She had been using two forms of contraception but did not wait for menstruation before starting isotretinoin therapy as recommended by the PPP. Her infant was born with multiple anomalies including complex congenital heart disease consisting of double outlet right ventricle with dextrocardia and aortic atresia, hydrocephalus, and facial dysmorphism. After extensive medical treatment and cardiac surgery, the infant died at age 9 weeks.

Case 2. A 35-year-old woman who had been taking isotretinoin for approximately 6 months tested positive on a home pregnancy test. She was 12 weeks pregnant when she discontinued isotretinoin use. Since 1989, she had had three isotretinoin-exposed pregnancies; only the third pregnancy resulted in a live birth. The first course of isotretinoin was prescribed by a dermatologist; she obtained the other prescriptions

Accutane-Exposed Pregnancies — Continued

from a friend who was a health-care worker. The outcome of the third exposed pregnancy was a full-term infant with no apparent malformations.

Case 3. A 35-year-old woman who was using an intrauterine device tested positive on a home pregnancy test. She had been taking isotretinoin for approximately 3 years before this pregnancy and had taken two doses of isotretinoin since her last menstrual period. She did not have acne. She took isotretinoin for approximately 1 week each month before menstruation to prevent oily skin. She was a health-care provider and received the prescription from a colleague who did not ask about or recommend contraception. She elected to terminate the pregnancy because of the exposure.

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Editorial Note: These cases identified challenges to preventing isotretinoin-exposed pregnancies; 13 of the 14 respondents did not use two forms of effective contraception, and eight had used no contraception when the exposed pregnancy occurred. The study also illustrated problems with acquiring a prescription outside a clinical setting, using leftover medication, purchasing the medication outside the United States, failing to perform pregnancy testing before therapy, and failing to wait 3 days after menstruation before beginning treatment (*5,7*).

Although the 14 respondents did not represent all women taking isotretinoin or all women with isotretinoin-exposed pregnancies, they were similar to others enrolled in the BUAS (e.g., the average age of the respondents was similar to the women enrolled in the BUAS [median: 26 years]) (*5*); however, respondents included more women aged >30 years than in previous studies of isotretinoin-exposed pregnancies (*6,7*). Seventy-one percent had some type of pregnancy test before starting isotretinoin, which is similar to the 60% reported for all women enrolled in the BUAS (*5*). The highest percentage of pregnancies in the BUAS occurred among women using oral contraceptives (*5*); nevertheless, more than half the 14 respondents reported at least one instance of sexual intercourse when contraception was not used, indicating that failure to use contraception may be as important as contraceptive failure.

The warning label on isotretinoin packaging states that it should not be used by women of childbearing potential unless the patient meets such conditions as having "severe, disfiguring nodular acne that is recalcitrant to standard therapies" (*1*). At least half of the 14 respondents reported that they did not meet this definition. Recent reports suggest that some dermatologists view isotretinoin as an effective method for treating conditions other than cystic acne (*8,9*). More widespread use of isotretinoin may result in more isotretinoin-exposed pregnancies.

The findings in this study are subject to at least two limitations. First, these cases were a convenience sample of 14 women from California, and they may not represent all isotretinoin-exposed pregnancies. Second, the findings cannot be generalized to evaluate the overall effectiveness of the PPP or other prevention programs.

Despite the increased demand that may be generated by Accutane advertising (*10*), physicians should limit use of the drug in women of childbearing potential to those who meet the criteria on the package insert. When isotretinoin treatment is necessary, physicians should provide precautions, contraindications, and all PPP elements; care

Accutane-Exposed Pregnancies — Continued

should be taken by women and their physicians to ensure that contraceptive recommendations are understood and followed. In addition, women of childbearing potential should not use isotretinoin unless they are under the care of a physician familiar with isotretinoin use.

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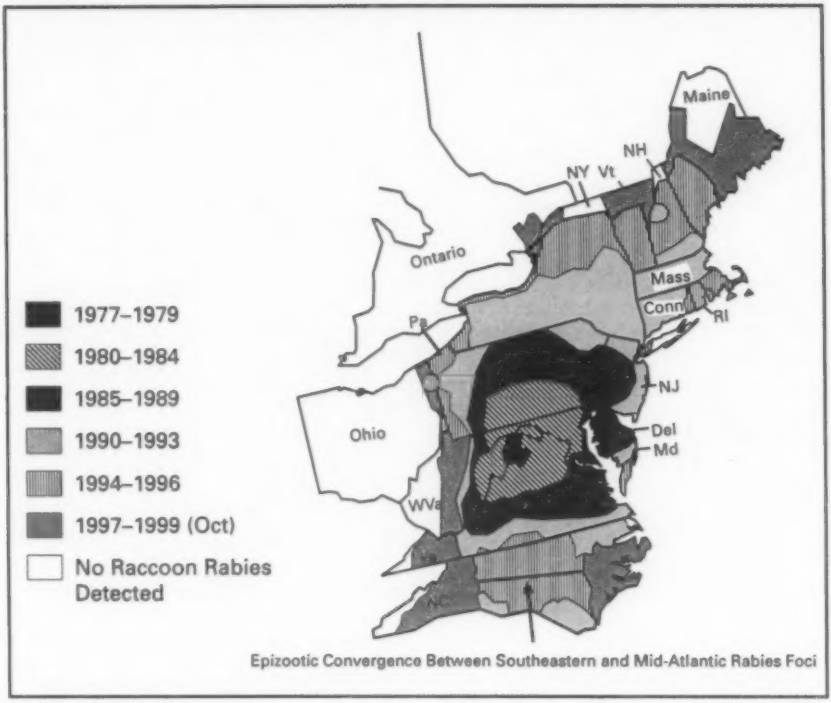
Update: Raccoon Rabies Epizootic — United States and Canada, 1999

In 1977, an outbreak of raccoon rabies was detected in an area on the West Virginia-Virginia border (*1*). Since then, the area affected by this distinct variant of rabies virus associated with raccoons has spread to Ohio in the west and New York, Pennsylvania, Vermont, New Hampshire, and Maine in the north (Figure 1). In addition, the once separate epizootics of rabies among raccoons in the southeastern and mid-Atlantic states converged in North Carolina. In July 1999, the raccoon rabies virus variant was reported from Ontario, Canada, on the New York border. This report describes the spread of this epizootic of raccoon rabies through mid-Atlantic and northeastern states and into Canada.

Canada. On July 14, 1999, the first case of rabies caused by the raccoon-associated variant was diagnosed in a raccoon across the St. Lawrence River from Ogdensburg, New York, in a village northwest of Prescott, Ontario. A second case was identified on July 26, 9 miles west of the first case. A third case was diagnosed on September 17, approximately 9 miles north of the other two cases. The Ontario Ministry of Natural Resources (OMNR) has been conducting trap-vaccinate-release programs for several years at the major border crossings in the St. Lawrence and Niagara areas to build defensive zones of vaccinated raccoons to minimize the spread of epizootic rabies. These first cases occurred outside the vaccinated zone. A total of 880 raccoons, 220 striped skunks, and one red fox, captured within a 3-mile radius of each of the first two cases, were negative for rabies by immunofluorescence test (OMNR, unpublished data, 2000). In approximately 3 miles around the point-control area, raccoons and

Raccoon Rabies — Continued

FIGURE 1. Detection of raccoon rabies, by year — United States and Canada, 1999



skunks were caught in live traps, vaccinated with an inactivated vaccine, and released. Raccoons with rabies probably crossed the St. Lawrence through or near the international bridge between Ogdensburg-Johnstown, New York, and Prescott, Ontario.

Maine. In August 1994, the raccoon-associated variant of rabies virus was first detected in Maine. During August 1994–August 1999, 857 rabid animals were identified, 85% of which were infected or presumed infected with the raccoon rabies variant. As of August 1999, 13 of 16 Maine counties were affected by the raccoon rabies variant. This variant also is occurring with increasing frequency in skunks.

New Hampshire. Cases of rabies believed caused by the raccoon-associated variant of rabies virus peaked in 1994 with 140 raccoons testing positive for rabies. Since 1994, the number of rabies cases decreased to 26 in 1996 and to 18 in 1997, with a slight increase to 23 in 1998. Reports in 1999 include two cats confirmed with the raccoon rabies variant and 18 raccoons.

New York. Since 1990, the raccoon-associated variant of rabies virus has spread to all but one northern county, two counties on eastern Long Island, and one New York City borough. In 1998, New York reported 1096 laboratory-confirmed rabies cases in animals; this marked the eighth consecutive year with >1000 cases. This epizootic has

Raccoon Rabies — Continued

been associated with raccoon rabies in domestic and wild animals, including one black bear and 31 white-tailed deer.

North Carolina. The raccoon rabies epizootic continues to spread to the east and west and affects >80% of North Carolina counties. Rabies has been found in western North Carolina in Watauga County, approximately 6 miles from the Tennessee border. No cases of rabies among raccoons have been reported from neighboring Tennessee counties.

Ohio. In early 1997, rabies among raccoons was first reported from northeastern Ohio. By the end of 1997, three counties bordering Pennsylvania reported 62 rabid animals, including 59 raccoons. Within 2 months of confirmation of the outbreak, the Ohio Department of Health (ODH), with support from CDC and the U.S. Department of Agriculture, implemented an oral rabies vaccination (ORV) program in counties along the Pennsylvania border. In May and September 1997 and in April and October 1998, ORV treatment was delivered. In May and September 1999, ODH distributed 1,459,442 vaccine-laden baits for animals; the treatment area covered 4037 square miles. After implementing ORV, reported cases of animals infected with the raccoon-associated rabies variant decreased to 26 (20 raccoons) in 1998. As of November 11, five raccoons and a chipmunk infected with the raccoon-associated rabies variant have been reported in 1999.

Vermont. The raccoon-associated variant of rabies virus was first identified in Vermont in 1994. By 1998, the epizootic had progressed into the north central counties of the state. An ORV campaign along the Canadian border initiated in 1997 appears to have decreased the reported number of rabies cases in that region, and no rabies has been reported associated with this variant across the Canadian border.

Virginia. In 1978, raccoon rabies was first identified in Virginia in a county bordering the West Virginia county that initially reported the new outbreak in 1977. Counties in southwestern Virginia continue to be affected by raccoon rabies. In 1998 and 1999, cases have been reported as far west as Russell and Washington counties.

West Virginia. Raccoon rabies became established in eastern West Virginia in approximately 1977. The Appalachian Mountains presented a barrier to the westward spread of the raccoon-associated rabies variant; however, in 1997, a rabid raccoon was found in Ritchie County, one county east of the Ohio River. In 1999, 23 rabid raccoons were identified from Monongalia and Marion counties on the northwestern border.

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Editorial Note: Raccoons have accounted for the largest percentage of animal rabies cases reported to CDC since 1990. In 1998, 44% of all rabies cases among animals in the United States occurred among raccoons. From 1990 to 1998, 35,264 cases of

Raccoon Rabies — Continued

raccoon rabies were reported in the United States. Of those 35,033 (99.3%) occurred in eastern states where raccoon rabies is enzootic.

Since the start of the mid-Atlantic epizootic of rabies involving the raccoon-associated variant of rabies virus, the epizootic front has progressed at approximately 18–24 miles each year (*2–4*). The progress of the epizootic appears most rapid in preferred raccoon habitats; however, major physiographic barriers, such as rivers and mountain ranges, can impede the epizootic advance (*3–5*). Although the Appalachian Mountains slowed the westward progression of the epizootic for more than a decade, counties in western Virginia and western North Carolina are reporting raccoon rabies cases. The threat of rabies introduction into counties in eastern Ohio soon may include much of the border with West Virginia in addition to the border with Pennsylvania. Once raccoon rabies becomes established in the Ohio River valley, few physiographic barriers remain to prevent its spread throughout the midwestern United States.

In the northern United States, the raccoon-associated variant of rabies virus has crossed the St. Lawrence River and reached Canada. As of January 2000, eight cases of raccoon rabies have been found in Ontario (RC Rosatte, OMNR, personal communication, 2000). Whether Canadian attempts at outbreak intervention (*6*) involving local raccoon population control and establishing an immune barrier are successful will require ongoing active surveillance. However, incursions of infected raccoons into Canada from other sites along the U.S. border where rabies is endemic will continue to occur unless control efforts on both sides of the border are effective.

Although human rabies is rare in the United States and Canada, the costs associated with rabies prevention are substantial (*2,7*). Where epizootics of raccoon rabies have occurred, the number of costly human postexposure treatments has increased dramatically (*8*). Although ORV immune barriers to prevent epizootic spread of wildlife rabies exist in several states, their maintenance requires substantial annual expenditures (*9*). Even when economic arguments for the use of wildlife rabies control in certain circumstances exist, active intervention to control wildlife rabies and public support for these activities in the United States are limited. The usefulness of ORV showed that targeting raccoon habitats with ORV increased vaccination rates to 63%, which was sufficient to halt the spread of rabies in free-ranging raccoons (*10*). However, ORV or other methods for eliminating or reducing rabies cases among raccoons after the disease has become endemic are generally unproven and need further assessment. In addition to educational initiatives and effective public health surveillance, prevention of human and domestic animal rabies primarily relies on the public to keep pets vaccinated and to reduce the number of stray animals.

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Notice to Readers

Recommended Childhood Immunization Schedule — United States, 2000

Each year, CDC's Advisory Committee on Immunization Practices (ACIP) reviews the recommended childhood immunization schedule to ensure it remains current with changes in manufacturers' vaccine formulations, revisions in recommendations for the use of licensed vaccines, and recommendations for newly licensed vaccines. This report presents the recommended childhood immunization schedule for 2000 (Figure 1) and explains the changes that have occurred since January 1999.

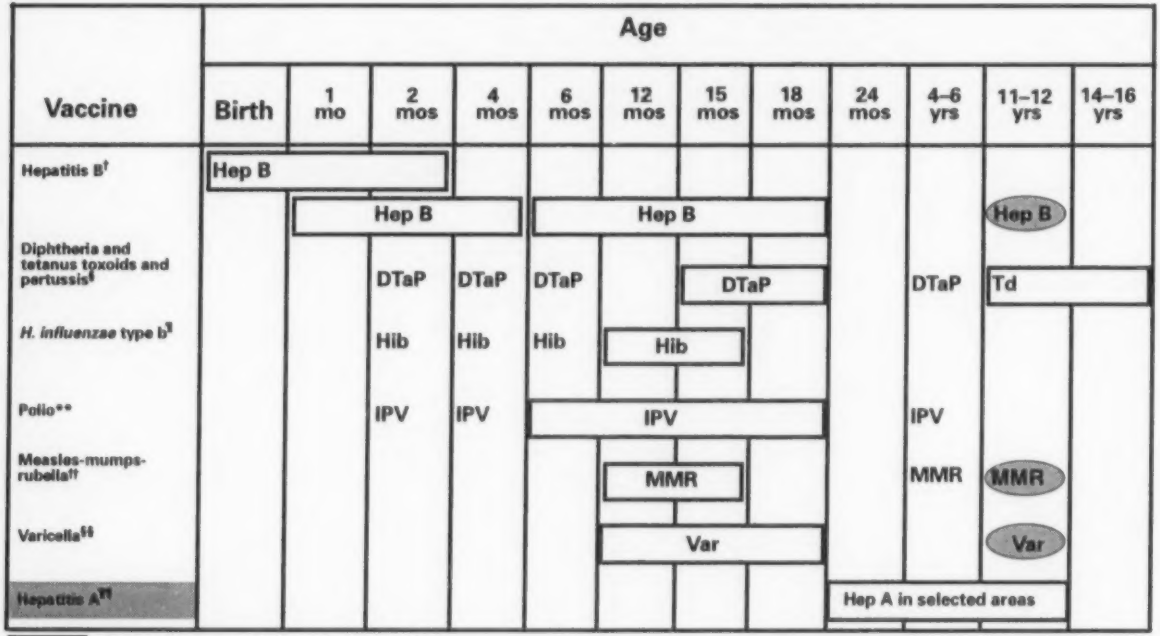
Since the publication of the immunization schedule in January 1999 (*1*), ACIP, the American Academy of Family Physicians, and the American Academy of Pediatrics have recommended removal of rotavirus vaccine from the schedule, endorsed an all-inactivated poliovirus vaccine (IPV) schedule for polio vaccination, recommended exclusive use of acellular pertussis vaccines for all doses of the pertussis vaccine series, and added hepatitis A vaccine (Hep A) to the schedule to reflect its recommended use in selected geographic areas (*2*). Detailed recommendations for using vaccines are available from the manufacturers' package inserts, ACIP statements on specific vaccines, and the 1997 Red Book (*3*). ACIP statements for each recommended childhood vaccine can be viewed, downloaded, and printed at CDC's National Immunization Program World-Wide Web site, http://www.cdc.gov/nip/publications/acip-list.htm.

Removal of Rotavirus Vaccine from the Schedule

On October 22, 1999, ACIP recommended that Rotashield®* (rhesus rotavirus vaccine-tetravalent [RRV-TV]) (Wyeth Laboratories, Inc., Marietta, Pennsylvania), the only U.S. licensed rotavirus vaccine, no longer be used in the United States (*4*). The decision was based on the results of an expedited review of scientific data presented to ACIP by CDC. Data from the review indicated a strong association between RRV-TV and intussusception among infants 1–2 weeks following vaccination. Vaccine use was suspended in July pending the ACIP data review. Parents should be reassured that children who received the rotavirus vaccine before July are not at increased risk for intussusception now. The manufacturer withdrew the vaccine from the market in October.

*Use of trade names and commercial sources is for identification only and does not constitute or imply endorsement by CDC or the U.S. Department of Health and Human Services.

FIGURE 1. Recommended childhood immunization schedule* — United States, January–December 2000



On October 22, 1999, the Advisory Committee on Immunization Practices (ACIP) recommended that Rotashield® (rhesus rotavirus vaccine-tetravalent [RRV-TV]), the only U.S.-licensed rotavirus vaccine, no longer be used in the United States (*MMWR*, Vol. 48, No. 43, November 5, 1999). Parents should be reassured that children who received rotavirus vaccine before July 1999 are not now at increased risk for intussusception.

* This schedule indicates the recommended ages for routine administration of licensed childhood vaccines as of November 1, 1999. Any dose not given at the recommended age should be given as a "catch-up" vaccination at any subsequent visit when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations.

† **Infants born to hepatitis B surface antigen (HBsAg)-negative mothers** should receive the first dose of hepatitis B vaccine (Hep B) by age 2 months. The second dose should be administered at least 1 month after the first dose. The third dose should be administered at least 4 months after the first dose and at least 2 months after the second dose, but not before age 6 months. **Infants born to HBsAg-positive mothers** should receive Hep B and 0.5 mL hepatitis B immune globulin (HBIG) within 12 hours of birth at separate sites. The second dose is recommended at age 1–2 months and the third dose at age 6 months. **Infants born to mothers whose HBsAg status is unknown** should receive Hep B within 12 hours of birth. Maternal blood should be drawn at delivery to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). **All children and adolescents (through age 18 years)** who have not been vaccinated against hepatitis B may begin the series during any visit. Providers should make special efforts to vaccinate children who were born in or whose parents were born in areas of the world where hepatitis B virus infection is moderately or highly endemic.

§ The fourth dose of diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP) can be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15–18 months. Tetanus and diphtheria toxoids (Td) is recommended at age 11–12 years if at least 5 years have elapsed since the last dose of diphtheria and tetanus toxoids and pertussis vaccine (DTP), DTaP, or diphtheria and tetanus toxoids (DT). Subsequent routine Td boosters are recommended every 10 years.

¶ Three *Haemophilus influenzae* type b (Hib) conjugate vaccines are licensed for infant use. If Hib conjugate vaccine (PRP-OMP) (PedvaxHIB® or ComVax® [Merck]) is administered at ages 2 months and 4 months, a dose at age 6 months is not required. Because clinical studies in infants have demonstrated that using some combination products may induce a lower immune response to the Hib vaccine component, DTaP/Hib combination products should not be used for primary vaccination in infants at ages 2, 4, or 6 months unless approved by the Food and Drug Administration for these ages.

** To eliminate the risk for vaccine-associated paralytic poliomyelitis (VAPP), an all-inactivated poliovirus vaccine (IPV) schedule is now recommended for routine childhood polio vaccination in the United States. All children should receive four doses of IPV: at age 2 months, age 4 months, between ages 6 and 18 months, and between ages 4 and 6 years. Oral poliovirus vaccine (OPV) (if available) may be used only for the following special circumstances: 1) mass vaccination campaigns to control outbreaks of paralytic polio; 2) unvaccinated children who will be traveling in <4 weeks to areas where polio is endemic or epidemic; and 3) children of parents who do not accept the recommended number of vaccine injections. Children of parents who do not accept the recommended number of vaccine injections may receive OPV only for the third or fourth dose or both; in this situation, health-care providers should administer OPV only after discussing the risk for VAPP with parents or caregivers. During the transition to an all-IPV schedule, recommendations for the use of remaining OPV supplies in physicians' offices and clinics have been issued by the American Academy of Pediatrics (*Pediatrics*, Vol. 104, No. 6, December 1999).

†† The second dose of measles, mumps, and rubella vaccine (MMR) is recommended routinely at age 4–6 years but may be administered during any visit, provided at least 4 weeks have elapsed since receipt of the first dose and that both doses are administered beginning at or after age 12 months. Those who previously have not received the second dose should complete the schedule no later than the routine visit to a health-care provider at age 11–12 years.

§§ Varicella (Var) vaccine is recommended at any visit on or after the first birthday for susceptible children, i.e., those who lack a reliable history of chickenpox (as judged by a health-care provider) and who have not been vaccinated. Susceptible persons aged ≥13 years should receive two doses given at least 4 weeks apart.

¶¶ Hepatitis A vaccine (Hep A) is recommended for use in selected states and regions. Information is available from local public health authorities and *MMWR*, Vol. 48, No. RR-12, October 1, 1999.

Use of trade names and commercial sources is for identification only and does not constitute or imply endorsement by CDC or the U.S. Department of Health and Human Services.

Source: Advisory Committee on Immunization Practices (ACIP), American Academy of Family Physicians (AAFP), and American Academy of Pediatrics (AAP).

Notices to Readers — Continued

Inactivated Poliovirus Vaccine for All Four Doses

As the global eradication of poliomyelitis continues, the risk for importation of wild-type poliovirus into the United States decreases dramatically. To eliminate the risk for vaccine-associated paralytic poliomyelitis (VAPP), an all-IPV schedule is recommended for routine childhood vaccination in the United States (*5*). All children should receive four doses of IPV: at age 2 months, age 4 months, between ages 6 and 18 months, and between ages 4 and 6 years. Oral poliovirus vaccine (OPV), if available, may be used only for the following special circumstances:

1. Mass vaccination campaigns to control outbreaks of paralytic polio.
2. Unvaccinated children who will be traveling within 4 weeks to areas where polio is endemic or epidemic.
3. Children of parents who do not accept the recommended number of vaccine injections; these children may receive OPV only for the third or fourth dose or both. In this situation, health-care providers should administer OPV only after discussing the risk for VAPP with parents or caregivers.

OPV supplies are expected to be very limited in the United States after inventories are depleted. ACIP reaffirms its support for the global eradication initiative and use of OPV as the vaccine of choice to eradicate polio where it is endemic.

Acellular Pertussis Vaccine

ACIP recommends exclusive use of acellular pertussis vaccines for all doses of the pertussis vaccine series. The fourth dose may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at 15–18 months.

Hepatitis A

Hepatitis A vaccine (Hep A) is listed on the schedule for the first time because it is recommended for routine use in some states and regions. Its appearance on the schedule alerts providers to consult with their local public health authority to learn the current recommendations for hepatitis A vaccination in their community. Additional information on the use of Hep A can be found in recently published guidelines (*2*).

Hepatitis B

Special considerations apply in the selection of hepatitis B vaccine products for the dose administered at birth (*6*).

Vaccine Information Statements

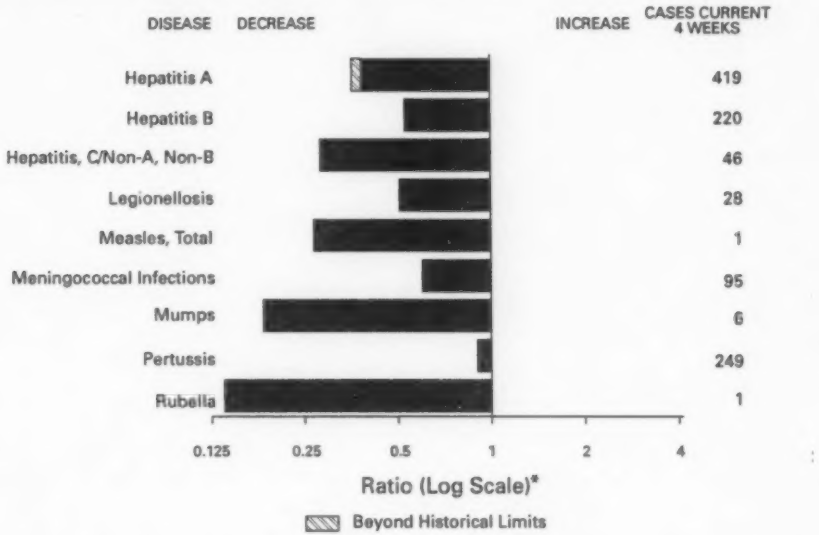
The National Childhood Vaccine Injury Act requires that all health-care providers, whether public or private, give to parents or patients copies of Vaccine Information Statements before administering each dose of the vaccines listed in this schedule (except Hep A). Vaccine Information Statements, developed by CDC, can be obtained from state health departments and CDC's World-Wide Web site, http://www.cdc.gov/nip/publications/VIS. Instructions on use of the Vaccine Information Statements are available from CDC's website or the December 17, 1999, Federal Register (64 FR 70914).

References

1. CDC. Recommended childhood immunization schedule—United States, 1999. MMWR 1999; 48:12–6.

(Continued on page 47)

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending January 15, 2000, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending January 15, 2000 (2nd Week)

	Cum. 2000		Cum. 2000
Anthrax	-	HIV infection, pediatric*¶	-
Brucellosis*	2	Plague	-
Cholera	-	Poliomyelitis, paralytic	-
Congenital rubella syndrome	-	Psittacosis*	-
Cyclosporiasis*	-	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	6
Encephalitis: California*	-	Streptococcal disease, invasive Group A	54
eastern equine*	-	Streptococcal toxic-shock syndrome*	2
St. Louis*	-	Syphilis, congenital¶	-
western equine*	-	Tetanus	-
Ehrlichiosis human granulocytic (HGE)*	-	Toxic-shock syndrome	3
human monocytic (HME)*	-	Trichinosis	-
Hansen Disease*	-	Typhoid fever	8
Hantavirus pulmonary syndrome*†	-	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	1		

-:no reported cases
*Not notifiable in all states.
† Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§ Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update December 26, 1999.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending January 15, 2000, and January 16, 1999 (2nd Week)

Reporting Area	AIDS		Chlamydia[§]		Cryptosporidiosis		*Escherichia coli* O157:H7*			
							NETSS		PHLIS	
	Cum. 2000[†]	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	-	-	7,583	25,376	12	33	16	34	5	28
NEW ENGLAND	-	-	630	569	-	1	2	5	2	4
Maine	-	-	16	-	-	-	-	-	-	-
N.H.	-	-	25	47	-	-	-	-	2	-
Vt.	-	-	23	12	-	1	-	-	-	-
Mass.	-	-	441	288	-	-	2	5	-	2
R.I.	-	-	-	81	-	-	-	-	-	-
Conn.	-	-	125	141	-	-	-	-	-	2
MID. ATLANTIC	-	-	41	2,945	1	6	-	1	-	-
Upstate N.Y.	-	-	N	N	1	-	-	1	-	-
N.Y. City	-	-	-	1,715	-	5	-	-	-	-
N.J.	-	-	41	432	-	-	-	-	-	-
Pa.	-	-	-	798	-	1	N	N	-	-
E.N. CENTRAL	-	-	2,013	3,814	1	9	3	13	-	5
Ohio	-	-	242	1,539	-	2	1	11	-	2
Ind.	-	-	229	396	-	-	-	-	-	1
Ill.	-	-	676	968	-	1	-	-	-	1
Mich.	-	-	355	438	1	1	2	2	-	-
Wis.	-	-	511	474	-	5	N	N	-	1
W.N. CENTRAL	-	-	276	1,207	1	2	2	6	1	4
Minn.	-	-	22	314	-	1	-	1	-	2
Iowa	-	-	1	10	-	-	-	3	-	1
Mo.	-	-	185	541	1	1	2	-	1	1
N. Dak.	-	-	-	31	-	-	-	-	-	-
S. Dak.	-	-	55	56	-	-	-	-	-	-
Nebr.	-	-	13	78	-	-	-	2	-	-
Kans.	-	-	-	178	-	-	-	-	-	-
S. ATLANTIC	-	-	1,508	6,280	-	1	1	3	-	5
Del.	-	-	138	83	-	-	-	-	-	-
Md.	-	-	120	564	-	1	-	1	-	-
D.C.	-	-	52	N	-	-	-	-	U	U
Va.	-	-	176	525	-	-	-	-	-	2
W. Va.	-	-	-	67	-	-	-	-	-	1
N.C.	-	-	829	771	-	-	1	2	-	2
S.C.	-	-	135	1,790	-	-	-	-	-	-
Ga.	-	-	58	1,320	-	-	-	-	U	U
Fla.	-	-	-	1,140	-	-	-	-	-	-
E.S. CENTRAL	-	-	244	1,333	-	-	1	2	-	1
Ky.	-	-	98	193	-	-	-	-	U	U
Tenn.	-	-	-	411	-	-	-	1	-	1
Ala.	-	-	146	496	-	-	-	1	-	-
Miss.	-	-	-	233	-	-	1	-	-	-
W.S. CENTRAL	-	-	859	3,107	-	-	-	-	1	2
Ark.	-	-	-	149	-	-	-	-	-	1
La.	-	-	-	691	-	-	-	-	1	1
Okla.	-	-	257	327	-	-	-	-	-	-
Tex.	-	-	602	1,940	-	-	-	-	-	-
MOUNTAIN	-	-	518	1,372	3	2	3	3	-	4
Mont.	-	-	-	-	-	-	2	-	-	-
Idaho	-	-	-	61	-	1	-	-	-	-
Wyo.	-	-	22	19	-	-	1	-	-	1
Colo.	-	-	68	212	-	-	-	2	-	1
N. Mex.	-	-	-	299	-	-	-	-	-	-
Ariz.	-	-	284	572	1	1	-	-	-	-
Utah	-	-	144	77	2	N	-	1	-	2
Nev.	-	-	-	132	-	-	-	-	-	-
PACIFIC	-	-	1,494	4,769	6	12	4	1	1	3
Wash.	-	-	494	471	N	N	-	-	1	2
Oreg.	-	-	-	135	-	1	-	1	-	1
Calif.	-	-	952	3,966	6	11	4	-	-	-
Alaska	-	-	48	69	-	-	-	-	-	-
Hawaii	-	-	-	128	-	-	-	-	-	-
Guam	-	-	-	25	-	-	N	N	U	U
P.R.	-	-	51	U	-	-	-	-	U	U
V.I.	-	-	-	U	-	U	-	U	U	U
Amer. Samoa	-	-	-	U	-	U	-	U	U	U
C.N.M.I.	-	-	-	U	-	U	-	U	U	U

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

†Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update December 26, 1999.

§Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending January 15, 2000, and January 16, 1999 (2nd Week)

Reporting Area	Gonorrhea		Hepatitis C/NA,NB		Legionellosis		Lyme Disease	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	4,117	13,884	36	94	12	25	5	133
NEW ENGLAND	176	229	-	-	2	2	-	19
Maine	-	-	-	-	2	-	-	-
N.H.	2	1	-	-	-	-	-	-
Vt.	1	3	-	-	-	1	-	-
Mass.	119	116	-	-	-	1	-	19
R.I.	-	22	-	-	-	-	-	-
Conn.	54	87	-	-	-	-	-	-
MID. ATLANTIC	48	1,731	-	2	-	7	2	79
Upstate N.Y.	37	61	-	-	-	-	1	-
N.Y. City	-	877	-	-	-	2	-	4
N.J.	11	343	-	-	-	2	-	45
Pa.	-	450	-	2	-	3	1	30
E.N. CENTRAL	1,248	2,122	11	50	4	10	-	5
Ohio	104	576	-	-	4	3	-	3
Ind.	168	245	-	-	-	-	-	-
Ill.	326	765	-	1	-	-	-	-
Mich.	341	270	11	26	-	5	-	-
Wis.	309	266	-	23	-	2	U	2
W.N. CENTRAL	112	580	5	11	1	-	-	1
Minn.	16	131	-	-	-	-	-	-
Iowa	4	5	-	-	-	-	-	-
Mo.	87	331	5	11	1	-	-	-
N. Dak.	-	3	-	-	-	-	-	-
S. Dak.	4	8	-	-	-	-	-	-
Nebr.	1	34	-	-	-	-	-	-
Kans.	-	68	-	-	-	-	-	1
S. ATLANTIC	1,446	4,493	1	4	3	2	2	22
Del.	76	58	-	-	-	1	-	1
Md.	69	796	-	3	2	-	2	18
D.C.	67	127	-	-	-	-	-	-
Va.	212	653	-	-	-	-	-	-
W. Va.	-	38	-	-	N	N	-	-
N.C.	851	705	1	1	1	1	-	3
S.C.	110	654	-	-	-	-	-	-
Ga.	61	596	-	-	-	-	-	-
Fla.	-	866	-	-	-	-	-	-
E.S. CENTRAL	200	1,257	8	5	-	1	-	2
Ky.	62	144	-	-	-	1	-	-
Tenn.	-	318	-	2	-	-	-	-
Ala.	138	491	-	1	-	-	-	2
Miss.	-	304	8	2	-	-	-	-
W.S. CENTRAL	378	2,085	-	-	-	-	-	-
Ark.	-	68	-	-	-	-	-	-
La.	-	697	-	-	-	-	-	-
Okla.	115	182	-	-	-	-	-	-
Tex.	263	1,138	-	-	-	-	-	-
MOUNTAIN	197	398	4	7	-	-	-	-
Mont.	-	-	-	-	-	-	-	-
Idaho	-	5	-	1	-	-	-	-
Wyo.	1	1	4	2	-	-	-	-
Colo.	102	54	-	1	-	-	-	-
N. Mex.	-	62	-	3	-	-	-	-
Ariz.	75	218	-	-	-	-	-	-
Utah	19	9	-	-	-	-	-	-
Nev.	-	49	-	-	-	-	-	-
PACIFIC	312	1,089	7	15	2	3	1	5
Wash.	94	76	-	-	-	-	-	-
Oreg.	-	26	-	-	N	N	-	-
Calif.	211	955	7	15	2	3	1	5
Alaska	7	11	-	-	-	-	-	-
Hawaii	-	21	-	-	-	-	N	N
Guam	-	3	-	-	-	-	-	-
P.R.	17	10	-	-	-	-	N	N
V.I.	-	U	-	U	-	U	-	U
Amer. Samoa	-	U	-	U	-	U	-	U
C.N.M.I.	-	U	-	U	-	U	-	U

N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending January 15, 2000, and January 16, 1999 (2nd Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
					NETSS		PHLIS	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	14	43	75	114	403	762	50	1,071
NEW ENGLAND	-	2	16	23	30	46	-	60
Maine	-	-	2	1	4	5	-	3
N.H.	-	-	-	-	4	-	-	1
Vt.	-	-	2	4	-	3	-	2
Mass.	-	2	6	7	22	30	-	29
R.I.	-	-	-	4	-	2	-	8
Conn.	-	-	6	7	-	6	-	17
MID. ATLANTIC	-	16	22	19	8	124	-	138
Upstate N.Y.	-	1	19	7	5	14	-	41
N.Y. City	-	5	U	U	-	36	-	62
N.J.	-	9	3	9	-	45	-	35
Pa.	-	1	-	3	3	29	-	-
E.N. CENTRAL	1	5	-	-	48	162	3	150
Ohio	1	-	-	-	35	26	-	29
Ind.	-	-	-	-	-	-	-	7
Ill.	-	3	-	-	-	62	-	55
Mich.	-	1	-	-	13	40	3	44
Wis.	-	1	-	-	-	34	-	15
W.N. CENTRAL	-	-	3	14	17	33	8	57
Minn.	-	-	2	3	1	7	-	17
Iowa	-	-	1	1	3	3	-	7
Mo.	-	-	-	-	12	12	6	20
N. Dak.	-	-	-	-	-	-	1	1
S. Dak.	-	-	-	8	-	2	1	4
Nebr.	-	-	-	-	1	5	-	3
Kans.	-	-	-	2	-	4	-	5
S. ATLANTIC	4	7	28	37	72	100	6	194
Del.	-	-	-	3	1	5	-	3
Md.	3	2	4	9	23	21	1	23
D.C.	-	4	-	-	-	2	U	U
Va.	-	-	12	5	-	-	-	28
W. Va.	-	-	-	1	-	-	5	2
N.C.	1	-	10	11	37	41	-	48
S.C.	-	-	2	-	11	3	-	22
Ga.	-	-	-	-	-	14	-	53
Fla.	-	1	-	8	-	14	-	15
E.S. CENTRAL	-	-	-	1	29	65	-	41
Ky.	-	-	-	-	4	7	U	U
Tenn.	-	-	-	1	-	9	-	30
Ala.	-	-	-	-	21	15	-	11
Miss.	-	-	-	-	4	34	-	-
W.S. CENTRAL	-	-	-	3	-	10	2	121
Ark.	-	-	-	-	-	2	-	11
La.	-	-	-	-	-	-	1	28
Okla.	-	-	-	3	-	4	-	1
Tex.	-	-	-	-	-	4	1	81
MOUNTAIN	-	1	4	6	58	48	21	93
Mont.	-	-	1	-	2	1	-	-
Idaho	-	-	-	-	5	1	-	6
Wyo.	-	-	2	3	1	1	-	3
Colo.	-	-	-	-	-	18	-	24
N. Mex.	-	-	-	-	2	10	-	13
Ariz.	-	1	1	3	21	1	6	29
Utah	-	-	-	-	27	5	15	12
Nev.	-	-	-	-	-	11	-	6
PACIFIC	9	12	2	11	141	174	10	217
Wash.	-	-	-	-	-	-	2	19
Oreg.	-	1	-	-	-	9	8	22
Calif.	9	11	2	11	137	143	-	157
Alaska	-	-	-	-	4	3	-	2
Hawaii	-	-	-	-	-	19	-	17
Guam	-	-	-	-	-	4	U	U
P.R.	-	-	1	1	-	11	U	U
V.I.	-	U	-	U	-	U	U	U
Amer. Samoa	-	U	-	U	-	U	U	U
C.N.M.I.	-	U	-	U	-	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending January 15, 2000, and January 16, 1999 (2nd Week)

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS					
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999†
UNITED STATES	150	408	15	321	93	252	48	342
NEW ENGLAND	7	4	1	8	1	3	-	7
Maine	-	-	-	-	-	-	-	-
N.H.	-	-	-	2	-	-	-	-
Vt.	-	-	-	-	-	-	-	-
Mass.	7	4	-	5	1	2	-	1
R.I.	-	-	-	-	-	-	-	3
Conn.	-	-	1	1	-	1	-	3
MID. ATLANTIC	1	36	-	33	-	9	8	3
Upstate N.Y.	1	2	-	9	-	-	-	-
N.Y. City	-	8	-	16	-	5	3	3
N.J.	-	19	-	8	-	2	-	-
Pa.	-	7	-	-	-	2	5	-
E.N. CENTRAL	49	135	-	49	24	27	-	24
Ohio	7	58	-	6	3	5	-	10
Ind.	2	-	-	-	13	4	-	3
Ill.	-	42	-	38	6	15	-	11
Mich.	40	17	-	-	-	-	-	-
Wis.	-	18	-	5	2	3	-	-
W.N. CENTRAL	17	30	2	30	-	12	1	2
Minn.	4	2	-	7	-	-	1	2
Iowa	6	-	-	-	-	-	-	-
Mo.	7	20	2	20	-	11	-	-
N. Dak.	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-
Nebr.	-	5	-	2	-	1	-	-
Kans.	-	3	-	1	-	-	-	-
S. ATLANTIC	4	27	-	15	53	103	16	14
Del.	-	2	-	-	-	-	-	2
Md.	1	4	-	-	6	11	-	2
D.C.	-	1	U	U	19	6	-	-
Va.	-	-	-	-	9	4	-	-
W. Va.	-	-	-	-	-	1	-	2
N.C.	2	7	-	5	15	30	-	-
S.C.	1	4	-	2	4	9	16	7
Ga.	-	-	-	-	-	30	-	-
Fla.	-	9	-	8	-	12	-	1
E.S. CENTRAL	6	34	1	40	6	48	6	12
Ky.	-	5	U	U	-	4	-	3
Tenn.	-	18	1	35	-	16	-	-
Ala.	2	3	-	5	6	23	6	9
Miss.	4	8	-	-	-	5	-	-
W.S. CENTRAL	-	24	3	112	8	35	-	74
Ark.	-	4	-	3	-	1	-	-
La.	-	-	1	9	-	9	-	U
Okla.	-	8	1	-	5	6	-	2
Tex.	-	12	1	100	3	19	-	72
MOUNTAIN	19	14	4	22	-	5	3	5
Mont.	-	-	-	-	-	-	-	-
Idaho	2	2	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-
Colo.	-	5	-	7	-	-	-	U
N. Mex.	2	2	-	2	-	-	3	1
Ariz.	14	2	2	9	-	5	-	1
Utah	1	2	2	3	-	-	-	2
Nev.	-	1	-	1	-	-	-	1
PACIFIC	47	104	4	12	1	10	14	201
Wash.	-	-	2	7	-	-	8	1
Oreg.	-	2	2	1	-	1	-	3
Calif.	46	98	-	-	1	9	6	188
Alaska	1	-	-	-	-	-	-	2
Hawaii	-	4	-	4	-	-	-	9
Guam	-	1	U	U	-	-	-	-
P.R.	-	-	U	U	8	4	-	-
V.I.	-	U	U	U	-	U	-	U
Amer. Samoa	-	U	U	U	-	U	-	U
C.N.M.I.	-	U	U	U	-	U	-	U

N: Not notifiable U: Unavailable -: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

†Cumulative reports of provisional tuberculosis cases for 1999 are unavailable ("U") for some areas using the Tuberculosis Information System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending January 15, 2000, and January 16, 1999 (2nd Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported*		Total	
	Cum. 2000†	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	2000	Cum. 2000	2000	Cum. 2000	Cum. 2000	Cum. 1999
UNITED STATES	12	43	191	506	110	175	-	1	-	-	1	-
NEW ENGLAND	1	-	2	10	1	9	-	-	-	-	-	-
Maine	-	-	1	1	-	-	-	-	-	-	-	-
N.H.	-	-	1	-	-	-	-	-	-	-	-	-
Vt.	1	-	-	-	1	-	-	-	-	-	-	-
Mass.	-	-	-	6	-	5	-	-	-	-	-	-
R.I.	-	-	-	-	-	-	-	-	-	-	-	-
Conn.	-	-	-	3	-	4	-	-	-	-	-	-
MID. ATLANTIC	2	8	2	28	1	25	-	-	-	-	-	-
Upstate N.Y.	2	2	-	1	-	-	-	-	-	-	-	-
N.Y. City	-	5	2	19	1	7	-	-	-	-	-	-
N.J.	-	1	-	6	-	5	-	-	-	-	-	-
Pa.	-	-	-	2	-	13	-	-	-	-	-	-
E.N. CENTRAL	2	11	42	150	22	22	-	1	-	-	1	-
Ohio	2	6	18	28	5	5	-	-	-	-	-	-
Ind.	-	-	-	-	-	-	-	-	-	-	-	-
Ill.	-	5	-	30	-	-	-	-	-	-	-	-
Mich.	-	-	24	92	17	15	-	1	-	-	1	-
Wis.	-	-	-	-	-	2	-	-	-	-	-	-
W.N. CENTRAL	1	1	28	32	7	12	-	-	-	-	-	-
Minn.	-	-	-	-	-	-	-	-	-	-	-	-
Iowa	-	-	1	-	-	-	-	-	-	-	-	-
Mo.	1	-	27	30	7	8	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	U	-	U	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	-	1	-	4	U	-	U	-	-	-
Kans.	-	1	-	1	-	-	U	-	U	-	-	-
S. ATLANTIC	5	10	13	30	15	25	-	-	-	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-	-
Md.	4	10	4	13	4	8	-	-	-	-	-	-
D.C.	-	-	-	2	-	-	-	-	-	-	-	-
Va.	-	-	-	-	-	-	-	-	-	-	-	-
W. Va.	-	-	-	-	-	-	-	-	-	-	-	-
N.C.	1	-	9	4	11	16	-	-	-	-	-	-
S.C.	-	-	-	-	-	-	-	-	-	-	-	-
Ga.	-	-	-	11	-	1	-	-	-	-	-	-
Fla.	-	-	-	-	-	-	U	-	U	-	-	-
E.S. CENTRAL	-	2	9	19	3	8	-	-	-	-	-	-
Ky.	-	1	-	4	-	-	U	-	U	-	-	-
Tenn.	-	1	-	3	-	1	-	-	-	-	-	-
Ala.	-	-	4	4	1	2	-	-	-	-	-	-
Miss.	-	-	5	8	2	5	-	-	-	-	-	-
W.S. CENTRAL	-	3	-	20	-	2	-	-	-	-	-	-
Ark.	-	-	-	2	-	1	U	-	U	-	-	-
La.	-	-	-	-	-	-	-	-	-	-	-	-
Okla.	-	2	-	6	-	1	-	-	-	-	-	-
Tex.	-	1	-	12	-	-	-	-	-	-	-	-
MOUNTAIN	1	2	7	45	-	19	-	-	-	-	-	-
Mont.	-	-	-	-	-	-	-	-	-	-	-	-
Idaho	-	-	-	1	-	3	-	-	-	-	-	-
Wyo.	-	1	-	1	-	-	-	-	-	-	-	-
Colo.	-	-	-	14	-	7	U	-	U	-	-	-
N. Mex.	-	1	-	3	-	4	-	-	-	-	-	-
Ariz.	-	-	5	17	-	1	-	-	-	-	-	-
Utah	1	-	2	3	-	-	-	-	-	-	-	-
Nev.	-	-	-	6	-	4	U	-	U	-	-	-
PACIFIC	-	6	88	172	61	53	-	-	-	-	-	-
Wash.	-	-	-	2	-	-	-	-	-	-	-	-
Oreg.	-	2	-	6	-	3	U	-	U	-	-	-
Calif.	-	3	88	164	61	49	-	-	-	-	-	-
Alaska	-	1	-	-	-	1	-	-	-	-	-	-
Hawaii	-	-	-	-	-	-	U	-	U	-	-	-
Guam	-	-	-	-	-	1	U	-	U	-	-	-
P.R.	-	-	-	-	-	1	-	-	-	-	-	-
V.I.	-	U	-	U	-	U	U	-	U	-	-	U
Amer. Samoa	-	U	-	U	-	U	U	-	U	-	-	U
C.N.M.I.	-	U	-	U	-	U	U	-	U	-	-	U

N: Not notifiable U: Unavailable -: no reported cases

*For imported measles, cases include only those resulting from importation from other countries.

†Of 2 cases among children aged <5 years, serotype was reported for 1 and of those, 0 were type b.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending January 15, 2000, and January 16, 1999 (2nd Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999
UNITED STATES	52	69	1	1	9	16	29	136	-	-	-
NEW ENGLAND	3	8	-	-	1	3	6	28	-	-	-
Maine	1	2	-	-	-	-	-	-	-	-	-
N.H.	-	-	-	-	-	1	1	-	-	-	-
Vt.	1	1	-	-	-	2	5	4	-	-	-
Mass.	1	5	-	-	1	-	-	24	-	-	-
R.I.	-	-	-	-	-	-	-	-	-	-	-
Conn.	-	-	-	-	-	-	-	-	-	-	-
MID. ATLANTIC	2	6	-	-	-	1	1	1	-	-	-
Upstate N.Y.	-	-	-	-	-	1	1	-	-	-	-
N.Y. City	1	3	-	-	-	-	-	-	-	-	-
N.J.	1	1	-	-	-	-	-	1	-	-	-
Pa.	-	1	-	-	-	-	-	-	-	-	-
E.N. CENTRAL	9	15	-	-	1	11	11	27	-	-	-
Ohio	3	8	-	-	-	10	10	26	-	-	-
Ind.	-	1	-	-	-	-	-	-	-	-	-
Ill.	-	5	-	-	1	-	-	-	-	-	-
Mich.	6	1	-	-	-	1	1	1	-	-	-
Wis.	-	-	-	-	-	-	-	-	-	-	-
W.N. CENTRAL	13	4	1	1	1	-	-	2	-	-	-
Minn.	-	-	-	-	-	-	-	-	-	-	-
Iowa	1	-	1	1	1	-	-	2	-	-	-
Mo.	12	3	-	-	-	-	-	-	-	-	-
N. Dak.	-	-	U	-	-	U	-	-	U	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	U	-	-	U	-	-	U	-	-
Kans.	-	1	U	-	-	U	-	-	U	-	-
S. ATLANTIC	6	7	-	-	-	1	4	10	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-
Md.	2	3	-	-	-	-	-	6	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-
Va.	-	-	-	-	-	-	-	-	-	-	-
W. Va.	-	-	-	-	-	-	-	-	-	-	-
N.C.	4	2	-	-	-	1	4	4	-	-	-
S.C.	-	2	-	-	-	-	-	-	-	-	-
Ga.	-	-	-	-	-	-	-	-	-	-	-
Fla.	-	-	U	-	-	U	-	-	U	-	-
E.S. CENTRAL	1	3	-	-	-	-	2	3	-	-	-
Ky.	-	-	U	-	-	U	-	-	U	-	-
Tenn.	-	1	-	-	-	-	-	-	-	-	-
Ala.	1	1	-	-	-	-	2	3	-	-	-
Miss.	-	1	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	-	3	-	-	1	-	-	-	-	-	-
Ark.	-	1	U	-	-	U	-	-	U	-	-
La.	-	-	-	-	-	-	-	-	-	-	-
Okla.	-	1	-	-	-	-	-	-	-	-	-
Tex.	-	1	-	-	1	-	-	-	-	-	-
MOUNTAIN	1	10	-	-	-	-	5	31	-	-	-
Mont.	-	-	-	-	-	-	-	-	-	-	-
Idaho	1	2	-	-	-	-	-	13	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	2	U	-	-	U	-	7	U	-	-
N. Mex.	-	1	N	N	N	-	3	2	-	-	-
Ariz.	-	3	-	-	-	-	-	1	-	-	-
Utah	-	1	-	-	-	-	2	7	-	-	-
Nev.	-	1	U	-	-	U	-	1	U	-	-
PACIFIC	17	14	-	-	5	-	-	34	-	-	-
Wash.	-	-	-	-	-	-	-	-	-	-	-
Oreg.	-	5	N	N	N	U	-	-	U	-	-
Calif.	17	6	-	-	2	-	-	34	-	-	-
Alaska	-	2	-	-	-	-	-	-	-	-	-
Hawaii	-	1	U	-	3	U	-	-	U	-	-
Guam	-	-	U	-	-	U	-	-	U	-	-
P.R.	-	-	-	-	-	-	-	-	-	-	-
V.I.	-	U	U	-	U	U	-	U	U	-	U
Amer. Samoa	-	U	U	-	U	U	-	U	U	-	U
C.N.M.I.	-	U	U	-	U	U	-	U	U	-	U

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending January 15, 2000 (2nd Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	711	551	105	30	5	20	107
Boston, Mass.	141	99	25	8	1	8	21
Bridgeport, Conn.	77	63	11	1	-	2	7
Cambridge, Mass.	18	13	1	1	-	1	-
Fall River, Mass.	45	37	6	2	-	-	5
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	33	30	2	1	-	-	3
Lynn, Mass.	21	17	4	-	-	-	1
New Bedford, Mass.	34	28	3	1	1	1	11
New Haven, Conn.	67	47	17	-	-	3	11
Providence, R.I.	92	74	10	3	3	2	9
Somerville, Mass.	4	3	-	1	-	-	-
Springfield, Mass.	68	50	12	5	-	1	12
Waterbury, Conn.	49	40	6	3	-	-	9
Worcester, Mass.	64	50	8	4	-	2	18
MID. ATLANTIC	2,909	2,117	504	201	43	43	223
Albany, N.Y.	63	53	9	1	-	-	6
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	114	87	22	3	1	1	24
Camden, N.J.	26	16	5	4	-	1	-
Elizabeth, N.J.	15	9	6	-	-	-	-
Erie, Pa.	56	53	2	1	-	-	3
Jersey City, N.J.	62	44	8	4	3	3	-
New York City, N.Y.	1,611	1,150	304	115	18	23	83
Newark, N.J.	U	U	U	U	U	U	U
Paterson, N.J.	26	16	8	-	1	1	6
Philadelphia, Pa.	366	239	70	40	15	2	22
Pittsburgh, Pa.§	60	42	12	3	1	2	4
Reading, Pa.	48	42	4	2	-	-	10
Rochester, N.Y.	158	134	14	6	2	2	24
Schenectady, N.Y.	21	17	1	2	-	1	1
Scranton, Pa.	42	36	4	2	-	-	4
Syracuse, N.Y.	169	123	25	13	1	7	25
Trenton, N.J.	48	35	8	4	1	-	6
Utica, N.Y.	24	21	2	1	-	-	5
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,386	1,746	387	133	46	74	264
Akron, Ohio	75	55	8	8	2	2	17
Canton, Ohio	53	42	8	2	-	1	-
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	208	151	29	13	5	10	31
Cleveland, Ohio	166	111	32	13	6	4	8
Columbus, Ohio	262	183	51	15	5	8	27
Dayton, Ohio	220	165	37	10	4	4	27
Detroit, Mich.	244	157	37	28	6	16	28
Evansville, Ind.	71	51	15	3	1	1	8
Fort Wayne, Ind.	71	51	16	-	3	1	5
Gary, Ind.	23	15	5	2	1	-	2
Grand Rapids, Mich.	58	43	9	1	1	4	13
Indianapolis, Ind.	238	165	31	6	4	12	27
Lansing, Mich.	57	31	19	6	1	-	5
Milwaukee, Wis.	168	126	26	9	2	5	13
Peoria, Ill.	73	56	15	-	-	2	12
Rockford, Ill.	68	53	12	3	-	-	7
South Bend, Ind.	76	69	1	4	-	2	8
Toledo, Ohio	160	124	22	9	3	2	17
Youngstown, Ohio	95	78	14	1	2	-	9
W.N. CENTRAL	1,049	780	188	59	29	13	120
Des Moines, Iowa	216	166	43	5	1	1	29
Duluth, Minn.	U	U	U	U	U	U	U
Kansas City, Kans.	26	14	5	6	1	-	3
Kansas City, Mo.	93	62	16	5	7	3	7
Lincoln, Nebr.	66	53	8	3	2	-	6
Minneapolis, Minn.	271	214	35	14	6	2	34
Omaha, Nebr.	124	86	21	10	5	2	22
St. Louis, Mo.	70	51	12	4	-	3	-
St. Paul, Minn.	88	64	13	7	3	1	13
Wichita, Kans.	95	70	15	5	4	1	6
S. ATLANTIC	1,165	778	233	106	29	18	123
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	281	182	47	37	12	3	28
Charlotte, N.C.	152	106	31	10	3	2	28
Jacksonville, Fla.	222	154	49	11	4	4	28
Miami, Fla.	82	52	14	11	1	3	8
Norfolk, Va.	68	38	14	9	4	3	8
Richmond, Va.	91	62	21	6	1	1	8
Savannah, Ga.	39	29	8	1	1	-	3
St. Petersburg, Fla.	88	70	13	5	-	-	11
Tampa, Fla.	U	U	U	U	U	U	U
Washington, D.C.	121	72	28	16	3	2	1
Wilmington, Del.	21	13	8	-	-	-	-
E.S. CENTRAL	1,139	833	177	83	23	23	125
Birmingham, Ala.	279	200	45	24	4	6	44
Chattanooga, Tenn.	106	85	14	5	2	-	11
Knoxville, Tenn.	125	95	23	6	-	1	12
Lexington, Ky.	98	71	15	6	4	-	2
Memphis, Tenn.	198	141	36	16	2	3	19
Mobile, Ala.	95	65	15	6	4	5	11
Montgomery, Ala.	48	44	1	1	1	1	8
Nashville, Tenn.	192	132	28	19	6	7	18
W.S. CENTRAL	2,128	1,436	425	166	57	44	185
Austin, Tex.	127	91	25	6	3	2	14
Baton Rouge, La.	U	U	U	U	U	U	U
Corpus Christi, Tex.	73	55	14	4	-	-	10
Dallas, Tex.	258	170	53	23	7	5	14
El Paso, Tex.	126	92	22	8	2	2	8
Ft. Worth, Tex.	156	101	38	10	2	5	19
Houston, Tex.	487	313	92	50	21	11	42
Little Rock, Ark.	112	81	21	10	-	-	8
New Orleans, La.	223	124	56	28	7	8	19
San Antonio, Tex.	313	230	54	21	7	1	25
Shreveport, La.	57	39	8	1	4	5	4
Tulsa, Okla.	196	140	42	5	4	5	22
MOUNTAIN	1,385	982	236	95	40	27	163
Albuquerque, N.M.	149	100	27	13	8	1	14
Boise, Idaho	49	36	5	1	4	3	5
Colo. Springs, Colo.	75	52	14	2	5	2	8
Denver, Colo.	121	90	17	8	3	3	12
Las Vegas, Nev.	266	168	62	28	5	3	29
Ogden, Utah	49	39	9	1	-	-	8
Phoenix, Ariz.	236	160	41	22	5	7	30
Pueblo, Colo.	29	23	4	1	1	-	2
Salt Lake City, Utah	180	131	23	12	7	7	26
Tucson, Ariz.	231	183	34	7	2	1	29
PACIFIC	1,930	1,483	299	111	32	25	248
Berkeley, Calif.	28	18	8	1	-	1	3
Fresno, Calif.	154	118	20	12	4	-	28
Glendale, Calif.	16	13	2	1	-	-	1
Honolulu, Hawaii	101	67	25	4	1	4	8
Long Beach, Calif.	86	73	8	3	1	1	17
Los Angeles, Calif.	292	199	51	27	9	6	15
Pasadena, Calif.	47	39	7	1	-	-	9
Portland, Oreg.	192	151	24	12	4	1	16
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	276	214	41	11	6	4	55
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	270	217	37	12	2	2	54
Santa Cruz, Calif.	58	49	5	4	-	-	12
Seattle, Wash.	191	134	40	13	3	1	5
Spokane, Wash.	72	56	11	2	-	3	11
Tacoma, Wash.	147	115	20	8	2	2	16
TOTAL	14,802¶	10,686	2,534	984	304	287	1,558

U: Unavailable -: no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

§Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

Notices to Readers — Continued

2. CDC. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48(no. RR-12).
3. American Academy of Pediatrics. Active and passive immunization. In: Peter G, ed. 1997 Red book: report of the Committee on Infectious Diseases. 24th ed. Elk Grove Village, Illinois: American Academy of Pediatrics 1997:1–71.
4. CDC. Withdrawal of rotavirus vaccine recommendation. MMWR 1999;48:1007.
5. CDC. Recommendations of the Advisory Committee on Immunization Practices: revised recommendations for routine poliomyelitis vaccination. MMWR 1999;48:590.
6. CDC. Recommendations regarding the use of vaccines that contain thimerosal as a preservative. MMWR 1999;48:996–8.

Notice to Readers

Conference on Vaccine Research

The *Third Annual Conference on Vaccine Research: Basic Science—Product Development—Clinical and Field Studies* will be held April 30–May 2, 2000, in Washington, D.C. This conference is sponsored by the National Foundation for Infectious Diseases (NFID) in collaboration with CDC, the National Institute of Allergy and Infectious Diseases, the International Society for Vaccines, the Center for Biologics Evaluation and Research of the Food and Drug Administration, the World Health Organization, the Albert B. Sabin Vaccine Institute at Georgetown University, and the U.S. Department of Agriculture. The meeting covers scientific data and issues from the disciplines involved in the research and development of vaccines and associated technologies for the control of human and veterinary diseases through vaccination.

The deadline for submitting abstracts for oral and poster presentations is January 28, 2000. Program announcements and forms for abstract submission, registration, and hotel reservations are available from Kip Kantelo, NFID, Suite 750, 4733 Bethesda Ave., Bethesda, MD 20814-5228; telephone (301) 656-0003, ext. 19; fax (301) 907-0878; e-mail kkantelo@nfid.org; World-Wide Web site http://www.nfid.org/conferences/.*

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